



# Supercomputing celebrates the big 10



JACQUELINE MCBRIDE/NEWSLINE

Ambassador Linton Brooks, administrator of NNSA.

## BlueGene/L sets new speed record

By Don Johnston  
NEWSLINE STAFF WRITER

NNSA Administrator Linton Brooks announced Thursday that the IBM BlueGene/L supercomputer developed through the Advanced Simulation and Computing (ASC) program for stewardship of the nation’s nuclear deterrent has performed 280.6 trillion operations per second on the LINPACK bench-

See **RECORD**, page 8

By Don Johnston  
NEWSLINE STAFF WRITER

The DOE/National Nuclear Security Administration initiative to increase computing power one million fold over 10 years was celebrated Thursday in the Laboratory’s Terascale Simulation Facility (TSF).  
Amabassador Linton Brooks, NNSA administrator; Ray Orbach, director of the DOE Office of Science; and Nicholas Donofrio, IBM executive vice president for Innovation and Technology, joined Lab leaders and representa-

See **ASC**, page 8



JACQUELINE MCBRIDE/NEWSLINE

Ray Orbach, director of DOE Office of Science.

## Jane Long addresses Senate on water and energy issues

Jane Long, associate director for the Laboratory’s Energy and Environment Directorate, spoke about water and energy issues last week before the U.S. Senate Committee on Energy and Natural Resources.  
The hearing, held Oct. 20, focused on water issues and its close ties to energy.  
Congress recently took action to help understand the linkages between energy and water to increase the supply and efficient use of both with the passage of the Energy Policy Act of 2005.  
Long discussed the Laboratory’s role in Senate bill 1860, the “Energy-Water Efficiency Technology Research, Development, and Transfer Program Act of 2005,” which specifically calls for a Department of Energy assessment and research program to

See **LONG**, page 7

## Recognizing weapons’ excellence works

By David Schwoegler  
NEWSLINE STAFF WRITER

The Laboratory and National Nuclear Security Administration recognized remarkable Laboratory accomplishments and moments of greatness on Thursday.  
Following the ASC Purple dedication at the Terascale Simulation Facility, Ambassador Linton Brooks joined Defense and Nuclear Technologies Associate Director Bruce Goodwin at the Discovery Center courtyard to present the

See **AWARDS**, page 7



DAVID SCHWOEGLER/NEWSLINE

Members of the Tilt Pour Furnace Development Team were honored by Ambassador Linton Brooks, right.



**HOME  
again**

— Page 3



**One for  
the books**

— Page 5



**No strings  
attached**

— Page 7





## LAB COMMUNITY NEWS

### Weekly Calendar

#### Technical Meeting Calendar, page 4

Monday  
**31**

The **LLLWA/B Division used book sale** will be held in a new location, the old Central Cafeteria, until Nov. 4, from 10 a.m. to 2 p.m. daily. The funds collected will be used to purchase Christmas gifts for needy children and to support the LLLWA scholarships. For more information, contact Yahel De La Cruz, 4-3507, or Edith Greene, 3-0252.

• • •

“At HOME in the Community” is hosting a **holiday food drive** for the Tracy Interfaith Ministries through Nov. 11. For more information, see page 3.

Tuesday  
**1**

**Open enrollment** for 2006 starts and runs through Wednesday, Nov. 30. For more information, see story above right.

Wednesday  
**2**

The Continuing Education Committee offers a free, one-time only live satellite broadcast, “**Carly Fiorina on Leadership.**” Note: there is a change in the broadcast time. The presentation will now be televised live at 7:50–8:40 a.m. Because of this unexpected change, the producer has offered a second presentation, featuring Richard Branson that will be televised from 1:10–2 p.m. All who enrolled in the Fiorina presentation will automatically be enrolled in the Branson presentation. Both presentations are offered “live only” with no taping allowed. To enroll or for information, contact EODD, 4-5479.

Thursday  
**3**

The Living Well series concludes with “**Coping with the Holidays**” from noon to 1 p.m. in the Bldg. 361 auditorium. Denise Larsen, licensed marriage and family therapist, will discuss the sources of stress that often accompany the holiday season, along with strategies to reduce stress and increase enjoyment. Living Well workshops are free and open to all employees. The series is sponsored by the Work-Life Center, Health Services Department/Employee Assistance Program and EAP/CONCERN (external employee assistance program). For more information, call the Work-Life Center, 2-9543.

## Open enrollment begins next week

November is the beginning of open enrollment, the time of year when employees can make decisions about UC health benefits for the coming year.

During this period, employees may transfer to a different medical or dental plan or add eligible family members to current plans. Employees also may enroll in or opt out of the UC-sponsored vision and disability plans or change participation in the Tax Savings on Insurance Premiums Program (TIP), Dependent Care Reimbursement Account (DepCare) and/or the Health Care Reimbursement Account (HCRA). All open enrollment changes will be effective Jan. 1, 2006.

Open enrollment begins on Tuesday, Nov. 1, and ends on Wednesday, Nov. 30. All open enrollment changes must be made online at <http://at.yourservice.ucop.edu>.

Employees who do not have access to a computer or who need help with making changes can visit the Benefits Office, Bldg. 571, room 1205, from 8 a.m. to 5 p.m. for assistance.

Late this month, UC mailed an open enroll-

### Fair, information sessions

The LLNL Benefits Fair will be held on Wednesday, Nov. 9, from 2–5 p.m. in the Central Café. There will be representatives in attendance from each of the UC insurance carriers as well as representatives from savings and investment programs. For additional information, refer to the Benefits Office Website at <http://www.llnl.gov/llnl/02employment/benefits/benefits.htm>.

The Benefits Office has scheduled a series of brown-bag presentations to discuss open enrollment on Nov. 10, 15, 17 and 22 in Bldg. 571, room 2301 from noon to 1 p.m. No pre-registration is required.

ment brochure that summarizes key plan changes, medical plan highlights and other information to help employees make informed decisions. Employees will not receive a personalized open enrollment statement as this information will be available online.

## IN MEMORIAM

### Anthony V. Carrano

Contributions in memory of Dr. Anthony V. “Tony” Carrano, the former associate director of Biology and Biotechnology Research Programs, may be sent to St. Michael School in Livermore.

Carrano died Oct. 10 after a bout with lymphoma. He was 63. Carrano retired from the Lab shortly after stepping down as associate director in 2000.

Carrano was known to family and friends as an educator and a person who encouraged and challenged all people to learn more and better them-

selves. A member of St. Michael’s Church in Livermore, Carrano volunteered at the school as well as the parish.

Contributions in his name will be used for educational purposes only and can be made payable to St. Michael School. Contributions may be sent to the following address:

In Memory of Anthony Carrano, c/o St. Michael School, 345 Church St., Livermore, 94550; Attn: Sister Emmanuel.

### Richard Clarke Murphy

Long-time Tracy resident Richard Clarke Murphy died Oct. 15 at Dameron Hospital in Stockton. He was 77.

A native of Alameda, Murphy moved from Livermore to the San Joaquin River Club in Tracy after retiring in 1971. He worked at the Laboratory for 20 years as an electronic engineering supervisor, after working at General Electric and Western Electric in Oakland.

Murphy served in the merchant marines and the U.S. Navy during World War II. He was a member of the Church of Jesus Christ of Latter-day Saints. He enjoyed fishing, camping and pets.

Murphy is survived by his wife of 58 years, Jean; children, Margaret Sparks of Lower Lake, Robert Lawrence Murphy of El Cajon and

Patricia Dee Tubbs of Reno; grandchildren, Sara Jean Murphy, Richard E. Lohr and Andrew Murphy, all of California; and great-grandchildren, Christopher and Nathan Lohr, both of California.

He is preceded in death by his sister, Margaret Victoria Murphy.

Services were held in Tracy. Contributions may be made in his name to Church of Jesus Christ of Latter-day Saints, Sycamore Ward, 1981 Chester Drive, Tracy 95376.

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### Frederick A. Robertson

Frederick A. Robertson, a resident of Livermore, died in Irving, Texas on Oct. 19. He was 80.

Born July 20, 1925, in Camden, N.J., Robertson graduated from Camden High School. He earned his degree in chemical engineering from the University of Pennsylvania, passed his bar exam in the State of Tennessee, earned his doctorate of jurisprudence from the University of Tennessee and was licensed to practice before the Supreme Court of Tennessee.

Robertson served in the U.S. Army during World War II.

He worked at the Atomic Energy Commission in Oakridge Tenn., and Aiken, S.C. He worked at LLNL where

he was chief patent attorney in the Energy Research and Development Administration.

He was preceded in death by his wife of 52 years, Caroline K. Robertson. He is survived by a sister, Margaret E. Chisham and husband Martin of Sarasota, Fla; a brother Edward W. Robertson and wife Ona F. Robertson of Irving, Texas; a sister Dorothy L. Korsznak of Moorestown, N.J.; and many nieces and nephews.

Services will be held Sunday, Oct. 30, from 4–6 p.m. at Callaghan Mortuary, 3833 East Ave., Livermore. Burial will be Monday, Oct. 31, at 1 p.m. at San Joaquin Valley National Cemetery, Gustine, Calif.

## HOME Campaign continues pledge incentive program for all employees, retirees

The HOME Campaign committee reminds all employees that if they make a pledge, they may win a prize. Here's how it works:

If you make your donation electronically, you are instantly entered in all drawings that have not been completed yet. If you donate via the HOME packet, give your completed packet to your HOME Representative or Organizational Team Leader (OTL) who will deliver it unopened to one of the HOME drop-off centers in the Trailer 1277 lobby or West Cafeteria. If you prefer, you can drop off your packet to the HOME drop-off centers yourself.

Envelopes will be accepted from Oct.12 through Dec. 9 for inclusion in the HOME Incentive Program. Envelopes must be dropped off at the HOME drop-off center by noon on each Friday to be eligible for the name drawing on the following Friday (see schedule below).

Winners will be randomly selected from among those pledging that week and from those pledges received earlier but not selected. After each drawing, winners will be notified where to pick up their prize. The earlier you donate, the more chances you have to win a prize. Prizes include gift certificates to restaurants, retail stores and sporting events.

For more information on the HOME Campaign or to donate online, go to <http://cmg-home.llnl.gov/run/>.



## Labwide food drive ready to roll



From left to right: Travis Martin, Paul Burke, Patrick Meissner, Lee Neely and Rob McGinnis prepare collection boxes for the Lab-wide holiday food drive next week.

The Lab-wide holiday food collection for Tracy Interfaith Ministries kicks off Monday, Oct. 31, and runs through Nov. 11. Tracy Interfaith Ministries, one of the agencies listed in the year's campaign, is an interactive group that helps those in need. The food items that are collected but not used at Thanksgiving will be provided to those in need during December.

Be a part of the final "At HOME in the community" activity sponsored by the 2005 HOME Campaign. Donate non-perishable items such as instant potatoes, canned yams, vegetables, canned cranberries, fruits, canned meats, rice and packaged roll mix. Gift cards and certificates from grocery stores like Safeway and Albertson's may also be donated.

### HOME incentive schedule

Turn in your packets by noon, Fridays. . .	for drawings on these dates
Friday, Oct. 21	Today, Oct. 28
Friday, Oct. 28	Friday, Nov. 4
Friday, Nov. 4	Friday, Nov. 11
Friday, Nov. 11	Friday, Nov. 18
Friday, Nov. 18	Wed., Nov. 23
Wed., Nov. 23	Friday, Dec. 2
Friday, Dec. 2	Friday, Dec. 9
Friday, Dec. 9	Friday, Dec. 16

### Food drive drop-off locations, points of contact

Bldg. 111	Dabbie Bowron	Bldg. 511 High Bay	Carolyn Woolum
Bldg. 132N	Chelle Clements	Bldg. 517	Phyllis Cox
Bldg. 132S (NAI)	Carolyn Chezik	Bldg. 531	Sam Ilyin
Bldgs. 170, 281, 543		Bldg. 551W	Patricia Axelrod/ Cathy Shakespeare
Trailer 1677	Mark Costella		Rita Brown/ Sheryl Goodman
Bldgs. 235, 242, 332	Karen Jautais	Bldg. 571	Bette Reid
Bldgs. 271, 274 Margaret	Roelling		Amy Rodgess
Bldgs. 314, 315 Albert	Holtman	Bldg. 671	Jessica Noriega
Bldg. 361	Germaine Clark	Trailer 1680	Cathy Knowlton
Bldgs. 381, 482, 490, 581	Shelia Williams	Trailer 1826	Lee Neely
Bldgs. 451, 453 Bing	Young	Trailer 1888	
		Trailer 4726	

## HOME directorate participation statistics

Directorate	Total employees	No. of contributions	\$ amount donated	Percent participation
Energy & Environment	255	24	9,439	9
Administration & Human Resources	332	61	23,296	18
Safeguards & Security	380	35	14,685	9
Laboratory Services	1,199	62	20,038	5
National Ignition Facility (NIF) Programs	182	19	8,514	10
Chief Financial Officer	103	24	10,395	23
Defense & Nuclear Technologies	376	40	19,756	11
Safety & Environmental Protection	744	73	45,442	10
Computation	1,032	89	55,502	9
Nonproliferation, Arms Control & International Security	241	35	13,326	15
Director's office	158	29	20,247	18
Biology & Biotechnology Research	230	18	9,045	8
Physics & Advanced Technologies	346	64	35,581	18
Engineering	1,979	130	93,113	7
Chemistry & Materials Science	492	64	28,730	13
S/L Vendor	0	0	0	0
Retirees	6	6	440	100
Others	0	0	0	0
Totals as of Oct. 27	8,055	773	\$407,549	9.5
Goal for the 2005 HOME Campaign			\$1.6 million	





NEWS YOU CAN USE

Employees asked to help reduce energy disruptions

By Blair Horst

UTEL

Employee assistance is still needed to help reduce energy disruptions caused by hurricanes Katrina and Rita. Recent articles in *Newsline* and *NewsOnLine* have addressed LLNL's response to the Department of Energy's goal to take appropriate actions conserving natural gas, electricity and transportation fuels.

In addition, vehicle use and maintenance practices lead to more efficient fuel economy. Here are a few tips that will help the Laboratory respond to the DOE directive.

- Drive only when necessary. Could a phone call and/or e-mail substitute for a personal visit?
- Ride a Lab bike during day light hours. Take one to your next meeting; save fuel, get into better shape and have that personal visit.

- Combine and plan trips with associates. Try to avoid taking more than a single vehicle to and from the same locations.
- Observe the speed limit. Gas mileage has an inverse geometric relationship with speed.
- Turn off the engine. Don't let engines idle when you leave to enter buildings; this wastes fuel. For safety it is important that running vehicles be attended at all times.
- Keep tires properly inflated. Make it a weekly task to check your tire pressures either at the Bldg. 611 fuel station or along the east side of Bldg. 511 near the Instrument Shop.
- Evaluate cargo weights against vehicle payloads to improve fuel mileage. Payload capacities vary even for some of the same model service trucks, therefore check the cargo weight and compare it to the payload capacity indicated in the owner's manual, provided by Fleet Management with each vehicle. LLNL service truck capacity ranges are

listed below; verify your vehicle has adequate capacity if the cargo is suspected of exceeding the cargo capacity for your vehicle:

- 1-ton Pickup Trucks: Not to exceed 3,500-lbs.
- 3/4 ton Pickup Trucks: Not to exceed 2,500-lbs.
- 1/2 ton Pickup Trucks: Not to exceed 1,500-lbs.
- 1/2 ton Compact Trucks: Not to exceed 1,000-lbs.
- Other vehicles: Request payload information from Fleet Management

Plant Engineering's crafts have been asked to limit their return trips to their shop. This will include taking breaks on job sites and ensuring workers are prepared with appropriate tools and material when arriving at job sites.

Contact José Pineda, Fleet Management, 3-7173, or Blair Horst, Energy Management Program, 2-8965 if you have questions.

Technology showcase in TSF next week

By Arnold Gatilao

COMPUTATION

The Computing Applications and Research (CAR) department is hosting its inaugural Research and Technology Showcase on Thursday, Nov. 3, in the Terascale Simulation Facility (Bldg. 453).

Demos, talks and two poster sessions will feature work being performed in all CAR divisions (Center for Applications Development and Software Engineering (CADSE), Center for Applied Scientific Computing (CASC), DCOM, NAIC, NIFE, EEBI).

Attendees will be able to vote on the best presentation in 11 different categories, including best poster, best demo, best talk, and best poster by division and by session. Awards will be given to the presenter or group responsible for winning submissions.

Due to the large number of poster submissions, two sessions featuring different sets of posters will be held. Session 1 is from 12:30-2 p.m. and session 2 is from 3-4:30 p.m.

"As a whole, the showcase committee was overwhelmed by the response from members of the depart-

ment," said Tamara Dahlgren, showcase committee co-chair and CADSE representative. "We are very impressed by the quality of submissions and the interest and enthusiasm of many of the presenters."

Dahlgren also is one of the many speakers scheduled to give talks in the TSF theater, also known as the Armadillo Room. Talks are approximately 15 minutes and are scheduled every 20 minutes beginning at 12:30 p.m. The last talk is scheduled for 4:50 p.m.

"I'm excited to see the showcase after looking at so many of the submissions," said Benjy Grover, showcase co-chair and DCOM group leader. "I was especially surprised at the diverse types of work being done throughout CAR."

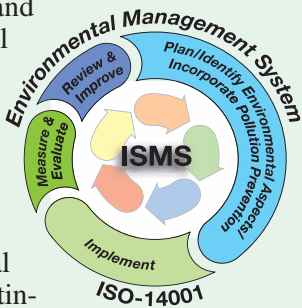
According to Dahlgren, the CAR showcase is an excellent opportunity for everyone to see the broad range of topics and expertise covered by the CAR department. "I'm hoping many people will make an effort to attend so they can learn more about the wonderful work being performed by their colleagues," she said.

For more information on the CAR Research and Technology Showcase including the full speaker schedule, visit <http://www-r.llnl.gov/car/showcase05>.

EMS enhanced to meet contract requirements

The Lab is implementing a comprehensive Environmental Management System (EMS) to meet the Department of Energy, U.S. executive order and UC contract requirements. This is the second in a series of informational tips that is posted in *NewsOnline* and *Newsline* to help employees understand the Lab's environmental activities.

Do you know what LLNL's environmental policy states? LLNL's environmental policy commits the Lab to responsible environmental stewardship through: continued environmental compliance; effective performance of EMS; and incorporation of pollution prevention into planning and decision making processes. To learn about the LLNL environmental policy, go to the Web at <http://www-epd.llnl.gov/ems/index.htm>.



Technical Meeting Calendar

Friday  
28

INSTITUTE FOR GEOPHYSICS AND PLANETARY PHYSICS

"The Co-Evolution of Galaxies and Black Holes:

The Perspective from the Sloan Digital Sky Survey," by Tim Heckman, Johns Hopkins University. Noon, Bldg. 319, room 205. Property protection area. Foreign national temporary escorted building access procedures apply. Contact: Wil van Breugel, 2-7195, or Lisa Lopez, 3-0250.

Thursday  
3

CENTER FOR ACCELERATOR MASS SPECTROMETRY

"A Historical Perspective on Possible Consequences of

Continued Carbon Dioxide Emissions," by Ken Caldeira. 2 p.m., Trailer 2925, room 122. Property protection area. Foreign national temporary building access procedures apply. Contact: Tom Guilderson, 2-1753.

COMPUTING APPLICATIONS AND RESEARCH

CAR Research and Technology Showcase 12:30-5:10 p.m., Bldg. 453, lobby and room 1012. Property protection area. Foreign national temporary escorted building access procedures apply. Contact: Benjy Grover, 4-3094.

Friday  
4

INSTITUTE FOR GEOPHYSICS AND PLANETARY PHYSICS

"Titan Unveiled — Recent Results from Huygens and Cassini," by Ralph Lorenz,

University of Arizona. Noon, Bldg. 319, room 205. Property protection area. Foreign national temporary escorted building access procedures apply. Contact: Wil van Breugel, 2-7195, or Lisa Lopez, 3-0250.

LIVERMORE PROJECTS COMMITTEE

"Red Storm Status and Future Plans," by Bob Ballance, Sandia National Laboratories, New Mexico; "ASC Purple Status and Future Plans," by Pam Hamilton, LLNL and "Blue

Gene/L Status and Future Plans," by Steve Louis, LLNL. 8:45 a.m., Bldg. 132, auditorium. Refreshments served. All attendees must have an SP access card or obtain special approval to attend any meeting. For LLNL, contact Barbara Sherohman, 3-6379, with any SP access questions. For SNL, contact Ann Stayton, 925-294-2582, with any SP access questions. Property protection area. No temporary building access for foreign nationals. Contact: Scott Couture, 3-4100, or Frances Mendieta, 3-7825.

CMS/CHEMICAL BIOLOGY & NUCLEAR SCIENCE DIVISION

"A Geologic History of Mars Inferred from Isotopic Studies of Martian Meteorites," by Lars Borg, Institute of Meteoritics, University of New Mexico. 11 a.m., Bldg. 151, room 1107. Property protection area. Foreign national temporary escorted building access procedures apply. Contact: Ian Hutcheon, 2-4481, or Bonnie McGurn, 3-2764.

The deadline for the next Technical Meeting Calendar is noon Wednesday.



AROUND THE LAB



Signal processing expert begins European sabbatical

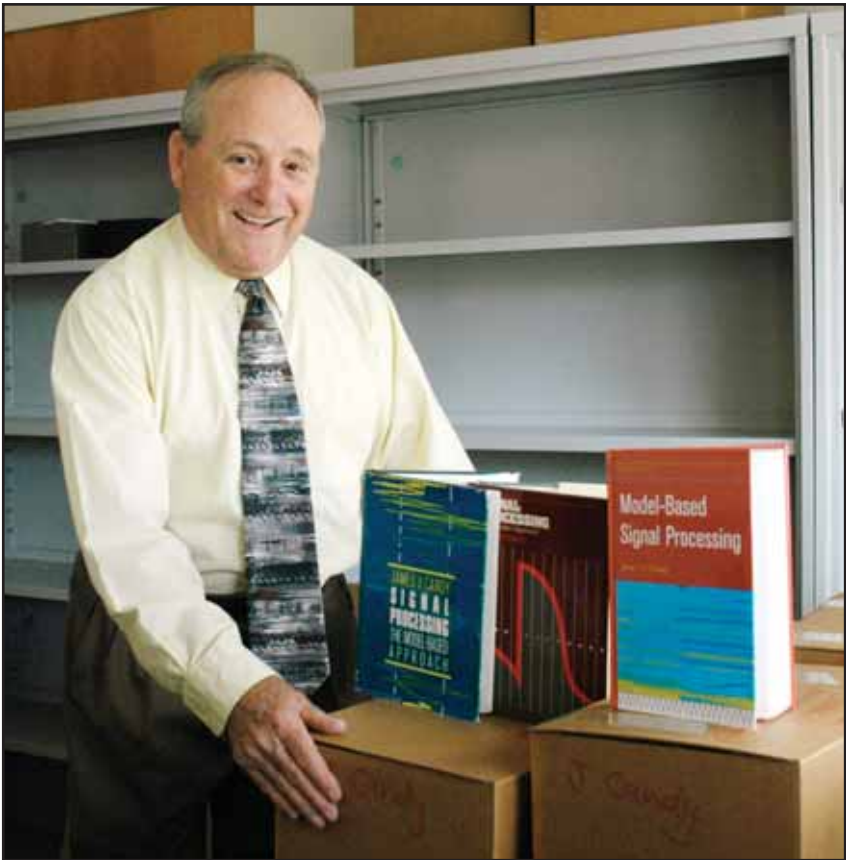
By Charlie Osolin  
NEWSLINE STAFF WRITER

Even though he has worked at the Laboratory for almost 30 years and has written three textbooks on signal processing, Jim Candy hasn't lost his thirst for learning.

So when he was recently elected a visiting fellow at Cambridge University's Clare Hall College in Cambridge, UK, Candy saw the honor as "an opportunity to learn" as much as a chance to apply his own knowledge and expertise to current problems in radiation detection and counter-terrorism.

Candy, chief scientist in the Laboratory's Engineering Directorate, prepared to depart for Europe this week to begin a six-month sabbatical in the Department of Engineering Signal Processing Laboratory, where he'll do research on non-linear signal processing techniques. "I'll be focusing on radiation detection — trying to find bombs in cargo containers and the like," Candy said. "They plan to put me to work."

Candy also has been offered a six-month stint at the University of Brussels in Belgium to focus on biomedical and ocean acoustical research, another of his specialties. Candy's innovative approach to ocean acoustics, called



JACQUELINE MCBRIDE/NEWSLINE

Jim Candy packs up his office for his move to the UK, including the three textbooks about signal processing that he has written.

"model-based ocean acoustic signal processing," earned him the Oceanic Engineering Society's prestigious Distinguished Technical

Achievement Award in 2002.

Studying and working in Europe is nothing new for Candy. He took a sabbatical at Supélec in Paris, the French equivalent of MIT, in 1987 and 1988 and also served a special assignment at the SACLANT Anti-Submarine Warfare (ASW) Center at the La Spezia Naval Base in Italy.

Candy is packing autographed copies of his textbooks to donate to the Clare Hall College library. His most recent book, "Model-Based Signal Processing," has just been published by John Wiley Inc., and the Institute of Electrical and Electronics Engineers (IEEE) Press. Candy, who founded LLNL's Center for Advanced Signal and Image Sciences (CASIS) and directed it for 10 years, was elected a fellow of IEEE in 1999. He was named a fellow of the Acoustical Society of America in 1996.

Candy has been in charge of CASIS' annual Signal and Imaging Workshop, which in recent years has attracted researchers from around the world. This year's workshop, scheduled for Nov. 17-18, will feature James Flanagan, vice present for research at Rutgers University, who recently received an IEEE Gold Medal for his work in speech and hearing processes and communications.

"I've been working to get him to a workshop for years," Candy said, "and now he's finally coming and I won't be here to hear him."

Flu vaccine expected to arrive at Health Services in November

The flu vaccine has yet to arrive at Health Services Department (HSD). The 3,500 doses that were ordered are expected to arrive sometime in November. Once the vaccine arrives on site, flu vaccine clinics will be scheduled in HSD and at the cafeterias.

The expected number of vaccine doses to be available in the United States this season is

less than originally anticipated. According to the Centers for Disease Control (CDC), the vaccine that has been distributed throughout the country is for the high-risk population. If you are in a high-risk group, you should contact your primary medical doctor or check the following Website <http://www.maximflu.com/> for available vaccine in your area.

CDC also is recommending that vaccine for other than high-risk groups not be given until November. Since the flu season is expected to run well through February 2006, November vaccinations will provide the anticipated protection against this year's flu.

Updates on the flu vaccine status will be posted in *Newsline* and *NewsOnLine*.



JACQUELINE MCBRIDE/NEWSLINE

Lab celebrates 30-year partnership

Wayne Shotts (right), deputy director for Operations, presents an award on behalf of the Lab to Gordon Burkhardt-Schultz, director of AID Employment Inc. (Advancement and Independence for the Disabled through Employment) for his outstanding leadership. The award was part of a ceremony held Wednesday to salute "Disabilities Awareness Week" and the 30 years of excellence provided by AID in partnership with LLNL.

AID, a non-profit agency established in 1975, contracts with LLNL and Sandia to place adults with developmental disabilities and significant learning disabilities into long term "real world" employment positions.

During the ceremony, an inspirational video highlighted AID employees who praised the program for helping them to live more independently. Today there are more than 30 adults working for AID at the laboratories.





# CLASSIFIED ADS

See complete classified ad listings at

<https://www-ais.llnl.gov/newsline/ads/>

**AUTOMOBILES**

2004 Honda CR-V EX, 33,000 miles, Excellent Condition. Optional Equipment: Side Cladding/Moulding, Mud Flaps, Cargo Cover, Sun Roof Visor. \$19,000. (925) 469-0803.

1995 - Dodge RamVan V-8, plush bluegray cloth interior-exc condition, TV, 4 capt chair, seat to elec bed, \$5,500.00 OBO 925-513-0160

2004 - 04 Honda Civic LX Sedan 4 door, blue, Available on Nov 1. Asking price:\$13,500 obo, mileage:27,400, 510-847-5434

1998 - Audi A8 Quattro. Drives beautifully and is very easy on the eyes. 105k miles. Heated leather seats, moonroof, auto everything. \$12,757. 925-784-7166

1999 - VW Passat - Excellent condition lots of power stuff - heated seats with leather interior. Blue ext. Black int. \$8,900 OBO. 925-245-1114

1995 - Honda Accord EX Coupe: 133k, Great for high school student. Just did a tune-up and complete detail. \$4000 OBO 209-835-8747

1994 - Geo Prizm LSi, 4D Sedan, 1.6L, at, ac, ps, pb, AM/FM/cass premium sound, 30 mpg, good cond, 98,000 mi, green, \$2,900. 925-443-5890

1997 - Silver Buick Regal LS, very good condition, well maintained. 110k miles, powered leather seats, pw, ps, CD/cassette. Asking \$3,700 or BO. 209-601-5770

2001 - Audi S4 Quattro Sedan; black exterior; black leather interior; 56K miles; excellent cond.; \$26K OBO. 925-980-1895

1997 - El Dorado in beautiful condition. All pwr, tires like new, leather pwr seats, low miles. Just \$10,000.00 OBO 510-537-7222

1999 - Chevy Tahoe, New Brakes, TV, playstation,exc. cond.,garaged, weld rims, billet grill, many extras. 103K miles, \$11,900 obo call eves. 209-952-7411

1983 - PORSCHE 944. 216K miles. 110K on clutch. Runs well. \$1700 OBO. 925-443-7499

2001 - BMW 325i sport pkg with all options. In excellent condition, with receipts for all maintenance, 34K miles, \$21,500. 925-398-6808

2004 - Lexus LS 430 Moonlite pearl, euro sport, Nav,smart key,flawless. 2 more years on warr. 16k miles,\$49.5K 925-443-8831

**AUTOMOBILE ACCESSORIES**

13 inch TIRES. 2 Michelin 185/70/13 radial tires, good condition only \$20 both. Livermore 925-447-7070

Thule rooftop bike rack. Two trays, wind fairing, locks. Will need feet to match your car roofline. \$100 925-735-0493

Lift up tonneau cover for 1960-1966 Chevy short bed fleetside pickup.All hardware included.White.\$50.00 925-447-6682

**BICYCLES**

Bike rack for vehicle, hitch shuttle, best offer. 925-443-9929

Girls 15-speed mountain bike + helmet. Used for 2-months by Lab summer student, \$30 for both. 925-218-2277

Bianchi 30 spd road bike.Frame-Reynolds 631,55 cm, fork/handlebar carbon, wheels/components/-Campagnola Veloce.1 yr old.\$1,200/obo.209 599-4014.

**BOATS**

1993 20 feet Javelin fish/ski boat, 200 outboard, excellent condition with fishing gear, skies and full electronics. Make offer. 925-447-8913

Valco 14ft. aluminum fihing boat with a bimini top.Great condition \$1,000 209-892-2763

**CAMERAS**

Sigma 28-200 zoom lens, up to 4x, Nikon mount, \$95. 925-377-6537

New in package 2500mAh M series battery for Sony Camcorder. About \$70 in the store, asking \$30. 925-454-9253

**ELECTRONIC EQUIPMENT**

Nice starter stereo equipment. Akai stereo cassette deck \$50.00, Sony AM FM stereo receiver, \$50.00. Excellent condition. Can bring to work. 510-537-7222

20-inch CRT monitor, Optiquest 2082DC, excellent condition, up to 1600 x 1280 resolution, color and power management, \$125. 925-455-5816

**GIVEAWAY**

Free landscaping rocks. Approximately 2-3-inch in diameter. Come and get them in Pleasanton. 925-600-1817.

Seven-foot antique style wood-frame gold color sofa with a 4-inch hole in the fabric of its back, otherwise in good condition. You haul. 510-886-6390

Folding garage door, single car with windows and hardware. Like new. 209-833-6452

White toilet, elongated bowl. Needs new fill valve and flapper. 925-454-0877

Old oak boards - about 15. Measure approx. 5 feet length and 4-7 inches width. Free. 925-449-4003

13 moving boxes - various sizes. Free. You pick up. 925-373-9319

**HOUSEHOLD**

Moving Sale: Queen bed,LazyBoy couch,futon, coffee table, computer desk,patio furniture, and more! Each item less than \$100 925-922-2639

DRYER, Kenmore, electric, top of line, heavy duty, quiet pak nexcl working order-new belt- white, top scratched, Pleasanton only \$120 925-447-7070

Sofa and loveseat. Dark green. Very comfortable, and great condition. Asking \$250.00 925-449-5441

Pottery Barn Kids Taylor one-drawer desk & low hutch w/ chair, honey wood, good condition, \$250. 925-294-9022

HAUNTED HOUSE-- Halloween night only. 5132 Diane Lane, Livermore. Adults and kids welcome. Kid friendly. 925-373-9435

Light green fabric chair. Perfect for watching TV or reading. Very comfortable, good condition. \$50. 925-454-0330

32-inch RCA TV w/ front/rear a/v in, component in, S-vid in. Only 2 years old.\$150.00 925-864-8626

Child's crib, solid wood, made by ChildCraft. Converts to day bed. 4 years old, very good condition. Includes bedding if wanted. \$200/obo 209-740-7138

Aroma Prestige 6 function rotisserie,broiler, toaster, defrost with timer. Hardly used. \$40.00 510-537-7222

Firewood storage rack. 4 feet X 8 feet X 16 inches. Square tubing. Great condition. No cover for it. Disassembles in half. \$50 925-513-4767

Soft cream colored leather sofa \$300.00, hexagonal beveled glass top with hexagonal marble base coffee table \$150.00 OBO. Call before 7 p.m. 925-354-0314

Kirby G4 vacuume cleaner with attachments.Cost \$1000.00 new,sell for \$250.00 obo.Runs great. 925-447-6682

Kenmore washer and gas dryer, Model 90. About 5 years old, in very good to excellent condition, \$50/ea. 925-398-6808

6 Kinkade oil/canvas paintings for sale plus more, over 40 percent off current values. Recently valued at \$12,000. Make offer. After 5 p.m. 209-679-6756

**MISCELLANEOUS**

Oak computer hutch \$20, bar stool \$5, recliner \$35, portable crib used once \$35, Samsonite suitcase on wheels \$30 925-443-9929

Jogger stroller. Hunter green and black, 3 wheeler with hand brake. \$40. 925-454-0330

Old windows from circa 1912 home. \$10 each. 209-835-5543

Lincoln 225 Amp AC Welder excellent condition \$50.00 209-951-8201

Wilsons womans black leather jacket size XL. Practically new. \$95 obo. iPod mini action jacket new in box. \$15.00 925-457-3650

BIG GARAGE SALE! Saturday, Oct.29, 9 a.m. - 3 p.m. Please no early birds. Lots of great items at great prices! 925 Dublin Ave., LIVERMORE 925-373-0751

Disney Halloween costumes, sz. 4-6, Tigger, Simba, Buzz Lightyear, Captain Feathersword, \$5 each. 925-454-0877

Two American Airlines vouchers, each for \$250, good anywhere in the world until June 2006, discounted at \$195. 925-377-6537

Christmas boutique and craft fair, hosted by MOPS, 348 N Canyons Pkwy, by Costco Livermore. Nov. 5, 10 a.m.-3p.m. 925-447-3465

GARAGE SALE! FRI-10/28 8 a.m.-1 p.m. Clothes, dishes, weight bench, xmas items, CDs and more. 1346 Lexington Way - LFT from Holmes st., RT from Superior. 925-989-4131

**MOTORCYCLES**

2000 - Suzuki RM250 dirtbike, fmf pipe, newer plastics, protaper bars. some extras. \$2000.00 o.b.o. 209-605-2773

2002 - Honda xr70. Good condition. Daughter outgrew. Few dings and scratches. \$1000 firm. 925-580-6557

2002 - Honda XR200 Dirt Bike in great condition \$1800.00 OBO 925-321-0206

1986 - Yamaha Virago XV 700, 14,000 miles, extra spare parts, 40-50 mpg., excellent condition, \$1400.00 obo Cell phone 925-413-0952 925-447-4521

2003 - Suzuki Z-400 Quad motorcycle, EC, has all skid plates, knerf bars, new tires, service manual \$4,600 209-814-4064

**MUSIC INSTRUMENTS**

Roland digital piano. Weighted keys, full size keyboard and pedals. Excellent condition. \$900 obo. 925-922-2639

Guitar Amplifier: Ampeg ss140 2/12 celestion speakers 140watts Solid State 2channels LOUD Photos available built in 70-80s \$200 or B/O 925-366-5511

**PETS & SUPPLIES**

Two parakeets, both 4 yrs old, one blue and white, one yellow and white, with cages and accessories. Make offer for one or both. 925-606-6155

ROTTWEILER adult male - Approximately 4 years old, neutered. Black/Mahogany. Good with kids, no cats. Loyal, likes walks and lots of attention! 209-825-0908

Bird house, handmade. Never used.Can bring to Lab if interested. \$8.00 510-537-7222

Lovable kitties galore! Special black &

white fluffy feline TVAR adoption event Nov. 5-6 Pet Extreme Livermore, noon-4 p.m. 925-443-6248

Kittens, one female-calico; one female-grey and white. Boxed train. First shots. Born July 10. 209-874-3724

**RECREATION EQUIPMENT**

Bumper pool table. Regulation size (rectangular), new burgandy colored felt, new bumpers, comes with all accessories. \$175. 925-454-0330

Health Rider. Keep fit indoors during winter for only 20 bucks. Also Voit stair stepper - \$25. 925-606-0260

Trampoline, 14Ft JumpKing with safety enclosure. About 3 years old. Needs new surrounding pad. \$100.00. 925-785-2371

Childs ski equipment: Ski helmet, XS-S, 54-56 cm, pink with blue and orange design, \$15. Ski poles, Scott, aluminum, 90 cm, \$15. 925-455-5816

Almost new pse nova camo bow with hard case,arrows quick release,only shot about a dozen times, I paid \$650 at Jerrys in Stockton; asking \$450 o.b.o 209-833-0636

**RIDESHARING**

Express your commute, call 2-RIDE for more information or visit <http://www-r.llnl.gov/ tsmp>.

Castro Valley - Gas prices are too high for me. Looking for ride share.Hours are 6:30-3:30; can be rearranged to fit your schedule.Work AWS 510-537-7222, ext. 4-3814

Oakland - Vanpool from Oakland to LLNL. Van originates at Highway 13 Redwood Rd exit. \$105/month 510-336-1420, ext. 3-1952

Solano County: Vallejo-Benicia - Carpool seeks driver/rider. Schedule B 9/80s. Leave Benicia at 6 a.m., 7 a.m. - 4:45 p.m. work schedule. 707-557-4347, ext. 4-5589

Modesto - WORKING THE 4-10 SHIFT. We have an opening on a luxury van now. The van runs Mon. thru Fri. on the 6-4:30 p.m. shift. 209-667-2365, ext. 2-8321

**SERVICES**

Finish grading and tractor work. 20+ years experience. 925-443-8890

**SHARED HOUSING**

LIVERMORE - Room to rent furnished or not \$600/month; 1 mile to Lab. Would consider commuter for less and few nights/week. Students ok. 925-784-7148

Brentwood - - Room for rent in 2BD/2BA house - Female only. Smoking outside ok. \$500/mo.+1/2 utilities. \$300 Deposit required. 925-487-3970

Livermore - Room for rent. Master bedroom, private entrance and bath. Nice quiet neighborhood, non-smoker female preferred. \$700/mo. 925-443-7774

Livermore - Room for rent, quiet neighborhood, close to labs, all privileges. Deposit not reqd. \$600/mo. 925-606-8420

Pleasanton - Furnished/Unfurnished room with private bath. No pets/no smoking. kitchen/laundry privledges \$650/mo+1/2 utilities+deposit. 925-485-3510

**TRUCKS & TRAILERS**

1984 5th wheel camper, 17 feet, nice compact size, easy to tow and maneuver, has everything you need, refrig, sink, htr, bthrm, sleeps 4, very clean, low miles, \$3000.00 510-276-1240

1975 - Ideal 24 foot travel trailer. Awning, stove, oven, heat/ac, lots of cabinets, bathroom w/ tub/sink/toilet.

\$1200 or B/O. 209-835-5543

1999 - Toyota Tacoma SR5 4WD V6 auto, extra cab, black, AC, Alpine CD, bedliner, extremely clean, like new, excellent cond. Must see to apprec 113K \$13K obo 925-487-4655

1979 - Ford Truck, 3/4 ton, 4 wheel drive, new tires, \$3,500. 925-449-3499

2000 - Ford Ranger XL white V6 auto 6cyl mint condt 46K miles new tires tow package bed liner custom bumper single CD AM/FM stereo ask \$8.2K eves 925-455-1993

1999 - 35 foot Gulfstream Voyager motorhome, 21,100 miles, Ford V10, good MPG, Central AC, and heat, all like new, many extras 209-824-1459

1990 - Ford F-250, Excellent condition, new transmission 11-05, tune up and injectors cleaned, runs great, 117000 mi. \$4000.00 or best offer. 510-581-6521

**VACATION RENTALS**

Squaw Valley, CA - Thanksgiving week (11/20-27). 1 bedroom timeshare available at Olympic Village Inn. Sleeps 4+, furnished/kitchen, ski & hiking. Good rate. 415-543-3643

Solana Beach/Del Mar - Oceanfront condo, deluxe 2 br., 2 1/2 ba., fully equiped, tennis, pool, jacuzzi, gated and covered parking, near San Diego attractions 925-443-2271

Cozy mountain cabin near Arnold. 4 bedr, 2 bath. Sleeps 12-14. Wood burning stove, near hiking, fishing, lakes. Plan ahead for snowy weather. 925-245-1114

Sooo cute beach cottage in Santa Cruz near boat harbor. 2 bedr,2 bath, spa, fully equipped kitchen. 4 short blks to ocean 925-245-1114

Honolulu - Looking for small condo or studio to rent in Waikiki area from Dec.23-Jan 6. Dates are open,near the zoo. 510-537-7222

Maui, HI - Kahana Reef oceanfront 1BR/1BA condominium. Beautiful two-island view, oceanside pool, and BBQs. LLNL rates for year-round reservations. 925-449-0761

Pinecrest - Cabin available near Dodge Ridge skiing. 3 bdrm/2 bath, fireplace w/wood, microwave, pool table, level cleared access to covered parking, \$225/wknd 925-449-5513

Tahoe Keys - House 3 bdrm, 2.5 bath, fenced yard, great views of water and mountains, \$195 per night call for details 925-376-2211

SOUTH LAKE TAHOE - 3 Bedroom 2 Bath Chalet,nicely furnished, quiet area,all amenities 209-599-4644

**WANTED**

SAXOPHONE wanted. 925-443-6722

Wanted! Used kids motorcycle safety equipment (helmets, boots, etc.). Kids are just starting out. 209-204-9095

WANTED-Used Bicycle with child carrier attached. Please contact me if you are or know of any one getting rid of their bike with child carrier. 925-980-4343

Wanted!! Older quad runner or 3 wheeler. Working condition and resonable price preferred. Can pick up. 209-204-9095

ROCKING CHAIR - sturdy, for use in church nursery. 209-836-5764

Denote your canoe to Livermore Boy Scout Troop 939. Receive a tax deduction and free use of canoes. 925-449-9423

Nice wood bunkbed. 925-449-3499

Quit,male, willing to pay for a spot near work, where I can park a small trailer in which to sleep three nights a week. Only require elec. hookup. 925-580-4180



## DDLS speakers play on Einstein's theories

Science meets music when Oxford University physics professor Brian Foster and solo violinist Jack Liebeck deliver a Director's Distinguished Lecturer Series presentation, "From Einstein to Superstrings," at 3 p.m. Monday, Nov. 7, in the Bldg. 123 auditorium.

The talk celebrates the 2005 World Year of Physics and links Einstein's favorite instrument — the violin — with many of the concepts of modern physics that he did so much to found.

Foster uses images and text to explain Einstein's life and career, as well as the modern ideas of particle physics that evolved from Einstein's work. Central in the discussion is the superstring theory, which attempts to achieve Einstein's dream of unify-



Brian Foster, left, and Jack Liebeck

ing gravity with the other forces and resolve the paradoxes and unanswered questions of the Standard Model.

Using the violin to illustrate some of the ideas discussed by Foster is 25-year-old violin virtuoso Liebeck, who will play parts of Bach's solo sonatas and partitas — some of Einstein's favorite pieces — as musical interludes in the physics exposition.

The presentation will be rebroadcast on Lab TV Channel 2 on Thursday, Nov. 17, 10 a.m., noon., 2, 4, and 8 p.m. and 4 a.m. on Friday, Nov. 18.

For further information, go to <http://www.physics.ox.ac.uk/use/rs/foster/> or <http://www.jackliebeck.com>

## Greenville Road closed until mid-December

The City of Livermore has advised the Lab's Traffic Safety Committee that Greenville Road will remain closed through mid-December, because of work delays by Union Pacific Railroad crews.

The construction site is ready for UPRR to relocate its tracks to the newly built shoofly bridge. But the city has been informed that the railroad will not start work until the first week of November. Only railroad crews can relocate the tracks, which UPRR had originally scheduled to start Sept. 14.

The city is working with the contractor to change the phasing of construction to recover some of the time lost, according to Harjit Sidhu, the city's point of contact for the Greenville project. Sidhu can be reached via e-mail at [hssidhu@ci.livermore.ca.us](mailto:hssidhu@ci.livermore.ca.us).

## Second annual 'Lab Ride' to honor veterans both fallen and living

Got a vintage bike stuffed in the garage somewhere? Bring it out and join other riders for the second annual "Lab Ride" at noon Thursday, Nov. 10, to honor veterans both fallen and living. The Livermore Laboratory Armed Forces Veterans Association (LLAFVA) is sponsoring the ride, which also will serve as the kickoff for the Laboratory Fire Department's participation in Toys for Tots. Riders are asked to make a \$20 donation to help pay for holiday gifts for LLNL's pen pals, the 101st Airborne in Iraq, and the Toys for Tots program.

Riders should meet at noon in parking lot B7-N, (near Bldg. 272) before making a ceremonial toy pick-up lap around Inner Loop Road. Riders will then head out East Gate, turn south on Greenville Road and then east on Tesla Road. One of the Lab's Fire Department trucks will lead the riders to Site 300. A Veterans Day ceremony honoring Laboratory employees who have served in Iraq and Afghanistan and a barbecue for all the riders will take place at Site 300. In addition, a special area will be cordoned off for a vintage bike show.

Riders from outside the Laboratory or from Sandia

may participate by joining the ride at the Discovery Center's parking lot off Greenville Road. For non-rider employees who would like to participate, they may donate a toy, watch the ride and meet the fire department on the toy pick-up lap at drop-off locations at Bldgs. 274, 543 and 482.

Riders interested in participating are asked to contact Ted Sheppard, [Sheppard1@llnl.gov](mailto:Sheppard1@llnl.gov), or 3-0787, to reserve a spot by Nov. 7. Veterans who have recently served in Iraq or Afghanistan are asked to contact Chelle Clements at [clements3@llnl.gov](mailto:clements3@llnl.gov), or 3-8134, as soon as possible.

## WEAPONS

*Continued from page 1*

NNSA Weapons Excellence awards for work performed in 2004. In the audience co-workers, family and friends watched, as three individuals and three teams each shared in the accolades.

Thomas E. Healy developed the certification roadmap for the W80-3 program, which has become a model for future development plans. Using a systems-engineering approach, Healy mapped the requirements in the military characteristics and stockpile-to-target-sequence onto component functions. The functions then were broken down into failure modes and risks, to be evaluated as part of certification, using quantification of margins and uncertainties as the basis for assessment.

Omar A. Hurricane's important contributions led to resolution of a long-standing weapons-physics uncertainty. His work integrates results from large- and small-scale experiments, as well as results from past nuclear tests. Hurricane developed an efficient computer model to simulate the important physics that allowed applying this improved understanding to current life extension program assessments and certification.

Mordecai D. Rosen made significant contributions leading to the resolution of a long-standing weapons-physics uncertainty. He applied this improved understanding to resolving puzzling nuclear test data anomalies. As a result, Rosen has improved the application of quantification-of-margins-and-uncertainty approach to ongoing stockpile assessment.

Livermore Computing TSF Team: Barbara Atkinson (leader) and Doug East demonstrated extraordinary quality and productivity in culminating a multi-year \$91 million project as lead program representatives for the Terascale Simulation Facility. TSF was completed a year early and on budget. Atkinson was involved in all planning and construction aspects. Her leadership was essential to the successful completion of the extremely complex and demanding construction project. East was responsible for activation of TSF. His diligence and attention to detail brought TSF from completed brick and mortar to an operational computer facility.

Livermore's National Hydrotest Plan Team: John E. Heidrich (leader), Jim Janzen, Gordon Krauter, Denise Kuklo, Cliff Shang and Matt Wraith significantly increased the efficiency of hydrodynamic tests through improved planning and execution. An in-depth review process maximized data return-on-

investment. Project planning and scheduling provided long-range views and short-range controls. This, plus regular feedback on experimental team performance, improved productivity in Site 300 shops and bunkers, with increased mission-critical data, including a dramatic increase in the number of focused weapon-science experiments.

Livermore's Tilt-Pour Furnace Development Team: Karen Dodson (leader), James Atkins, Michael Blau, Mark Bronson, David Dennison, Robert Klatt, Doug Mcavoy, Joe Phillips, David Riley and Michael West was recognized for developing this approach and demonstrating its utility for key plutonium pyrochemical operations that are needed for a future pit facility. Using the furnace for all pyrochemical operations significantly reduced transuranic waste about 70 percent. Its use also reduced by at least 50 percent the time to complete a plutonium purification operation, while reducing operator dose at least 50 percent. TPF is planned for future upgrades at LANL's TA-55 plutonium processing building, and at a modern pit facility.

It was just last May, in the same venue, that NNSA's Principal Deputy Administrator Jerry Paul recognized Livermore employees for Weapons Excellence in work performed during 2003.

## LONG

*Continued from page 1*

address energy and water related issues.

"The Laboratory has a proven track record in applying its capabilities to the complex water issues facing its nearby communities, California, the West and the nation," Long said before the committee. "LLNL scientists and engineers have at their disposal unique facili-

ties for analyzing trace amounts of hazardous compounds, some of the world's fastest computers, nanoscale characterization and fabrication capabilities, and special software and analytical tools developed for water and/or energy management."

Long stressed the importance of four of LLNL's technology research and development activities: selective water treatment technologies, desalination, sensor technologies, and water monitoring and management tools.

Other speakers who testified during the hearing included: Douglas Faulkner, DOE's acting assistant secretary for Energy Efficiency and Renewable Energy; Les Shephard, vice president for Energy; Resources and Nonproliferation at Sandia; and James Roberto, deputy director for Science and Technology at Oak Ridge National Laboratory.

For Long's full testimony, go to [http://energy.senate.gov/public/index.cfm?FuseAction=Hearings.Testimony&Hearing\\_ID=1508&Witness\\_ID=4294](http://energy.senate.gov/public/index.cfm?FuseAction=Hearings.Testimony&Hearing_ID=1508&Witness_ID=4294).



## ASC

Continued from page 1

tives of the tri-lab Advanced Simulation and Computing (ASC) program in dedicating two IBM systems — ASC Purple and BlueGene/L — which are serving NNSA's Stockpile Stewardship Program.

What began as the Accelerated Strategic Computing Initiative, or ASCI, in 1995 has become the Advanced Simulation and Computing program, providing the world's most powerful computing capability to weapons scientists and engineers at Sandia, Los Alamos and Lawrence Livermore national labs for stockpile stewardship.

"This is a great day for the national weapons labs, for IBM, for the entire Department of Energy, NNSA, American science and it's a particularly great day for the Stockpile Stewardship Program," Brooks said. "The Advanced Simulation and Computing Program is one of the great success stories of NNSA's Stockpile Stewardship Program...ASC is the glue that holds stockpile stewardship together."

"This advanced simulation and computing program has enabled simulation to join theory and experiment as fundamental pillars of scientific understanding," Brooks added. "To put that in context, it overturns two or three millennia of how we looked at science."

"The administration has reduced the nuclear weapons stockpile to levels lower than any time since the Eisenhower Administration," he said. "As we look at this kind of world, it's absolutely crucial that we be even surer of the weapons that remain."

"Machines are only useful because of the ingenuity of the people who design them, build them and run them," Brooks said in thanking all the ASC researchers for their contributions to stockpile stewardship.



JACQUELINE MCBRIDE/NEWSLINE

**From left: Bruce Goodwin, Dona Crawford, Linton Brooks, Michael Anastasio, Nicholas Donofrio, Ray Orbach and Dimitri Kusnezov following the dedication ceremony. Donofrio presented Anastasio with mounted cards from one of the ASC machines.**

Ray Orbach said the dedication ceremony "marks a milestone in the DOE Office of Science and NNSA partnership to revitalize the United States' efforts in high-end computing."

"Together the NNSA and Office of Science computing programs serve the Department of Energy's mission to advance U.S. energy, economic and national security, new energy technologies, scientific discovery and simulation and prediction of the behavior of nuclear weapons," Orbach said.

Dimitri Kusnezov, director of the ASC program at NNSA, called the program that produced Purple and BlueGene/L "a true national effort. We could not be here without Sandia, Los Alamos and without the other DOE laboratories that have helped us developing hardware and software. It could not happen without industry."

Kusnezov said ASC still faces challenges. "Our journey's not over," he said. "In our goal to make testing a true

anachronism, there's still a lot to be done."

Donofrio said that while a commitment to national security has always been important to IBM, "We did this because it makes good business sense. We did this because in the end we need a sustainable value proposition. We want to be around for the next 10 years and the next 20 years."

Looking to the not-too-distant future, Donofrio said kids "clutching those game boxes soon will be holding a teraflop of computing. They're going to think about the world differently. They're not going to have those silos of theory, experiment and simulation. This is all going to blur wonderfully and appropriately for them."

Lab Director Michael Anastasio noted that ASC has dominated supercomputing since the program's founding. Except for a brief two-year period, ASC supercomputers have held the top ranking on the Top500 list of the world's fastest supercomputers since 1997.

Anastasio said Purple and BlueGene/L are "symbols of more than the computing capability they represent."

"Purple symbolizes the ability of NNSA to deliver on a grand vision," he said. "BlueGene/L is an icon for the future. It represents the path we need to move in the future."

At the conclusion of the ceremony Dona Crawford, associate director for Computation, presented Donofrio with a framed montage of photos of the four ASC systems IBM has brought to Livermore as part of the ASC collaboration.

Bruce Goodwin, associate director for Defense and Nuclear Technologies, served as master of ceremonies for the dedication event. He recalled his New York City childhood when he stood atop the apartment building in which he lived and watched with awe as the Soviet satellite Sputnik flew by, and how 10 years later man first walked on the moon.

"Today, here we are standing on the moon of scientific computing," he summed up.

## RECORD

Continued from page 1

mark, the standard used by industry to measure computing speed.

This is more than double the speed the machine displayed running at half its current size when it made No. 1 on the Top 500 computer list in June 2005. This performance was achieved in the Laboratory's Terascale Simulation Facility (TSF).

Ambassador Brooks made the announcement at a ceremony dedicating the BlueGene/L and Purple IBM systems, and marking the 10th anniversary of the Advanced Simulation and Computing (ASC) program (see accompanying, story page 1).

In a demonstration of its capability to perform the work for which it was designed, BlueGene/L recently ran a record-setting materials science application at 101.5 teraflops sustained over seven hours on the machine's 131,072 processors, running an application of importance to NNSA's effort to ensure the safety, security and reliability of the nation's nuclear deterrent. This was the largest simulation of its kind ever attempted.

ASC Purple is an IBM Power5 system designed to conduct simulations of complete nuclear weapons performance and represents ASC's original 1995 goal to produce a 100 terflop system. Purple is undergoing final acceptance tests at the TSF. The Purple and BlueGene/L systems working in complement will put just under a half a petaflop (1,000 trillion operations per second) — more than any other scientific computing facility in the world — at the disposal of scientists and engineers working at Sandia, Los Alamos and Lawrence Livermore national laboratories.

"The unprecedented computing power of these two



JACQUELINE MCBRIDE/NEWSLINE

**Michel McCoy, second from left, of Computation leads visitors from IBM on a tour of the computer rooms in the Terascale Simulation Facility.**

supercomputers is more critical than ever to meet the time-urgent issues related to maintaining our nation's aging nuclear stockpile without testing," Brooks said. "Purple represents the culmination of a successful decade-long effort to create a powerful new class of supercomputers. BlueGene/L points the way to the future and the computing power we will need to improve our ability to predict the behavior of the stockpile as it continues to age. These extraordinary efforts were made possible by a partnership with American industry that has reestablished American computing preeminence."

"The early success of the recent code runs on BlueGene/L represents important scientific achievements and a big step toward achieving the capabilities we need to succeed in our stockpile stewardship mission," said LLNL's Director Michael Anastasio. "BlueGene/L allows us to address computationally taxing stockpile science issues. And these code runs provide a glimpse at the exciting and important stockpile science data to come."

The 101 teraflop record-setting materials science calculations referred to above involved the simulation of the cooling process in a molten actinide uranium system, a material and process of importance to stockpile stewardship. This performance demonstrates that BlueGene/L's architecture can scale with real-world applications. The 101-teraflop number is significant because it was sustained over time and was achieved conducting stockpile stewardship work.

BlueGene/L will move into classified production to address critical problems of materials aging in February. The machine is primarily intended for stockpile science molecular dynamics and turbulence calculations. High-peak speed, superb scalability for molecular dynamics codes, low cost and low power consumption make this an ideal solution for this area of science.



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